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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,983	11/18/2003	Eliezer Levy	200301701-2	4901

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

CALDWELL, MICHAEL J

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/715,983	<b>Applicant(s)</b> LEVY ET AL.	
	<b>Examiner</b> Michael Caldwell	<b>Art Unit</b> 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/18/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/18/2003</u>  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This office action is responsive to application 10/715983 filed November 7<sup>th</sup>, 2003, which claims priority as continuation to parent application 09/823337, filed March 29<sup>th</sup>, 2001. Claims 1-9 have been examined.
2. The Information Disclosure Statement (IDS) submitted on November 18<sup>th</sup>, 2003 is in compliance with the provisions of 37 C.F.R. 1.97. Accordingly, the IDS is being considered by the examiner.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

As described through the claims outlined below, the claimed invention does not physically transform an article or physical object to a different state or thing; therefore to be eligible for patent protection, the claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept. The Supreme Court has specifically identified three categories of nonstatutory subject matter: laws of nature, natural phenomena, and abstract ideas. These are not categories of invention. See *Diamond v. Diehr*, 450 U.S. at 175, 209 USPQ 1 (1981). However when an abstract idea is reduced to a practical application, the abstract idea

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no longer stands alone if the practical application of the abstract idea produces a useful, concrete and tangible result. This then satisfies the requirements of 35 U.S.C. 101. [See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ2d 1596, 1601-02 (Fed. Cir. 1998); *In re Alappat.*, 31 USPQ 2d 1545, 1558 (Fed. Cir. 1994)]

Claims 1-9 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. The functions of the system of claim 1, namely joining a first and second trigger tree and a respective operator tree via a flow operator and interconnecting an ordered union operator between the second trigger tree and its flow operator, does not result in any post-solution activity that is of real world result, therefore is considered an abstract manipulation of data, which is not tangible, patent-eligible subject matter. It is not clear within the claims how joining and interconnecting trees will produce any outcome. If this invention were to be directed towards storing this information for further use by a computer, which in turn produces a useful, real-world result, or directed towards displaying this information to a human operator, for example, the invention would contain tangible embodiments that would overcome such a 35 U.S.C. §101 patentability rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US Patent 6,374,236, herein referred to as Chen). Examiner suggests applicant review the entire teaching of Chen, as its entire teachings have been relied upon. When referring to a column and line number of the reference, the following nomenclature is used: CX, LY-Z representing column X, lines Y-Z.

**Regarding claim 6**

6. A method (abstract), comprising:

executing a first type of triggers (C 6, L 6-14, where there are AFTER, BEFORE and INSTEAD OF types of triggers) in parallel with each other (C 2, L 12-23, also C 2, L 56-64);

pipelining the first type of triggers with an activating statement (C 2, L 12-23, as well as C 9, L 37-60 where pipelining is achieved through the use of the spool file, allowing all executing triggers and triggering actions access to the data on which they operate); and

executing a second type of triggers in parallel with each other and subsequent to the activating statement (C 6, L 6-14, where there are AFTER, BEFORE and INSTEAD OF types of triggers, AFTER-type triggers operating subsequent to the activating statement).

**Regarding claim 7**

7. The method of claim 6 further comprising creating a temporary table, wherein the temporary table comprises rows of a input table that are affected by the activating

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statement (C 2, L 12-23, as well as C 9, L 37-60 where Chen discusses the spool as a temporary table)

**Regarding claim 8**

8. The method of claim 7 further comprising providing the rows of the temporary table as input to the first type of triggers (C 8, L 63 through C 9, L 2; "...only the necessary rows 304 may need to be accessed by the triggered actions").

**Regarding claim 9**

9. The method of claim 6 further comprising: forming a plurality of execution plans associated with executing the first type of triggers (C 9, L 9-17 where it states "...generate more efficient execution plans for the triggering events and triggered actions..."), pipelining the first type of triggers with the activating statement (C 2, L 12-23, as well as C 9, L 37-60 where pipelining is achieved through the use of the spool file, allowing all executing triggers and triggering actions access to the data on which they operate); and executing the second type of triggers (C 6, L 6-14); and evaluating the plans in terms of a performance metric (in creating a plurality of plans which are capable of resulting in faster execution of trigger events and actions, the performance metric of the selected plan, specifically cost of operation, as well as others which weren't selected must inherently be known, as is the general purpose and use of query optimizers and execution plans)

***Citation of Pertinent References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is suggested applicant review the teachings of these references to gain an understanding of the state of the art at the time of applicant's invention.

- US 5864842 Optimization of SQL queries using hash star join operations  
Pederson; Donald Raymond et al.
- US 5873075 Synchronization of SQL actions in a relational database system  
Cochrane; Roberta Jo et al.
- US 5884299 Optimization of SQL queries involving aggregate expressions...  
Ramesh; Bhashyam et al.
- US 6014655 Method of retrieving database  
Fujiwara; Shinji et al.
- EP 1111516 Method and apparatus for parallel execution of trigger actions  
Kabra, Navin et al.
- US 6374236 Parallel optimized triggers in parallel processing database systems  
Chen; James et al.
- US 6405212 Database system event triggers  
Samu; Sriram et al.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Caldwell whose telephone number is (571) 272-1942. The examiner can normally be reached on Mon-Fri 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Caldwell

Examiner

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DAVID VINCENT  
SUPERVISORY PATENT EXAMINER